

Types of estuaries



Estuaries come in all shapes and sizes and have many different names, such as bays, lakes, lagoons, (shallow) harbours, rivers or inlets. Deep harbours, (for example, Sydney Harbour and Broken Bay) are drowned river valleys.

Estuaries vary in their level of salinity depending on how they were formed. Where there is a strong tidal influence, the salinity will go up and down with the tide.

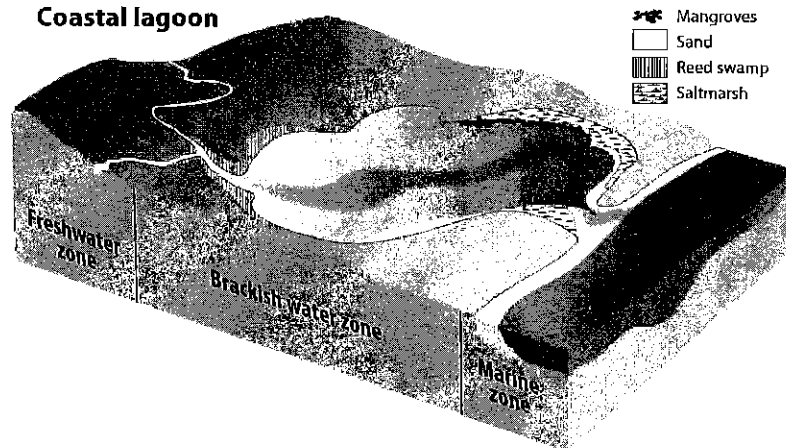
Lagoons and lakes are estuaries formed where waves depositing sand have created a barrier between the ocean and the lake. These may have a narrow opening to the sea and the tidal influence will not be strong.

Sometimes these lakes will open and close to the sea. These are called ICOLLS (intermittently closed and open lakes and lagoons).

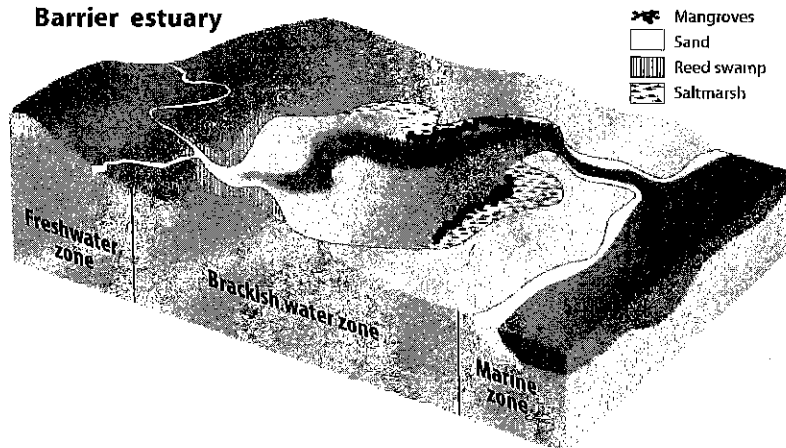
Some coastal lakes are permanently opened by artificial channels. They lack tidal influence and depend on wind currents to mix the fresh and saltwater.

Examples of saline coastal lakes include small systems such as Dee Why and Manly lagoons, but also include larger systems such as Wollumboola Lake and Wallaga Lake.

Coastal lagoon



Barrier estuary



Estuaries formed by rivers

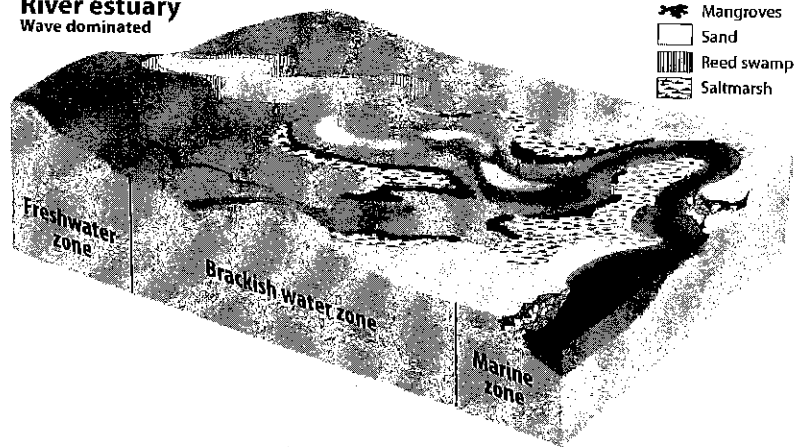
Some estuaries are formed by rivers. A strong flowing river will keep a wide entrance open. A weaker flowing river will allow waves to deposit sand in the entrance forming a barrier.

Wave dominated

When waves deposit sand they may form features such as sand bars that block the opening to the sea. This will limit the mixing of fresh and saltwater by tides. These estuaries will depend on wind to mix fresh and saltwater.

Many estuaries in south-east Australia are wave dominated, for example, Wagonga Inlet, Narooma.

River estuary
Wave dominated



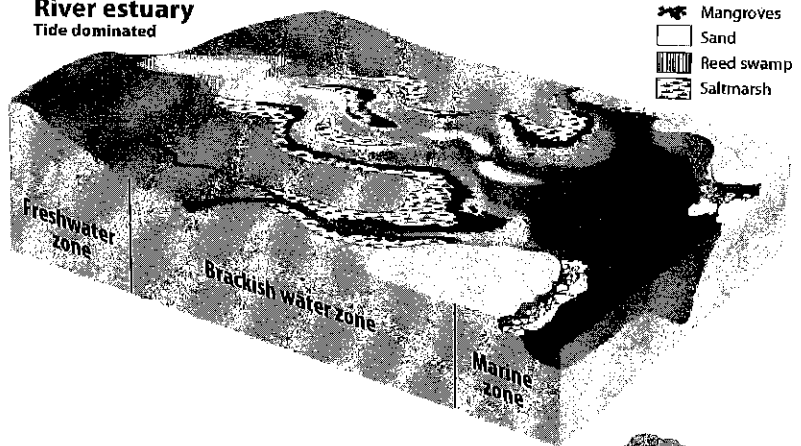
Tide dominated

When rivers create a wide opening to the ocean, tides will mix fresh and saltwater. In these estuaries, salinity will increase with closeness to the sea.

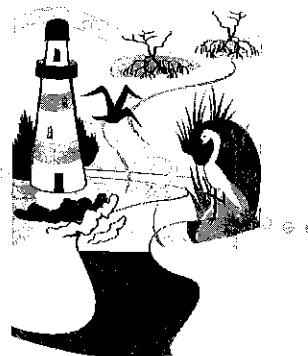
This type of estuary has a variety of habitats due to the influence of tides, including mangroves, saltmarsh, intertidal flats, rocky reefs and rocky shores.

Examples of tide dominated estuaries are the Tomaga and Deua rivers.

River estuary
Tide dominated



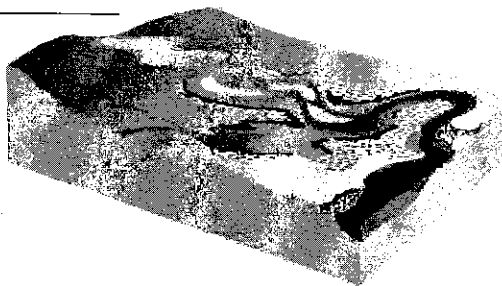
My estuary



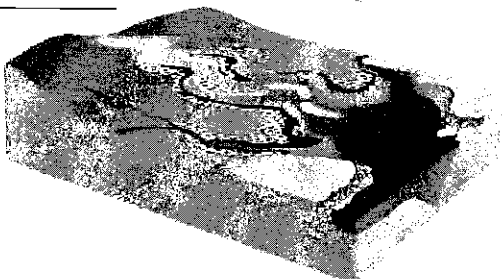
A. Types of estuaries

- From the list provided, name the estuary type represented by each block diagram: *Barrier estuary*, *Coastal lagoon*, *River estuary (tide dominated)*, *River estuary (wave dominated)*.
- Draw arrows and label the block diagrams to show the main features of each estuary type.

Estuary type: _____



Estuary type: _____



Estuary type: _____



Estuary type: _____

